

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>TOTO-36</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/JP2004/004479</b>	International filing date (day/month/year) <b>29.03.2004</b>	Priority date (day/month/year) <b>28.03.2003</b>
International Patent Classification (IPC) or national classification and IPC		
Applicant <b>TOTO LTD.</b>		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.	
3.	This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>6</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4.	This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004479

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1, 4-22 as originally filed/furnished
- pages\* 2-3 received by this Authority on 03.06.2005
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. 3-7, 10 as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-2, 9 received by this Authority on 03.06.2005
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets 1-14 as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☒ the claims, nos. 8
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (specify): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (specify): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (specify): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (specify): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004479

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-7, 9-10	YES
	Claims		NO
Inventive step (IS)	Claims	2	YES
	Claims	1, 3-7, 9-10	NO
Industrial applicability (IA)	Claims	1-7, 9-10	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
Document 1: JP 2002-266742 (Inax Corporation), 18 September 2002			
Document 2: Microfilm of the specification and drawings annexed to the Japanese Utility Model Application No. 41580/1990 (Laid-open No. 1673/1992) (Meidensha Corporation), 8 January 1992			
Document 3: JP 55-32985 A (Hitachi, Ltd.), 7 March 1980			
Document 4: JP 2001-182646 A (Toshiba Corporation), 6 July 2001			
Document 5: JP 59-217074 A (Ina Seito Kabushiki Kaisha), 7 December 1984			
Document 6: JP 2000-27262 A (Toto Co., Ltd.), 25 January 2000			
Document 7: JP 2002-235651 A (Sankyo Seiki Seisakusho Kabushiki Kaisha), 23 August 2002			
<p>The invention set forth in claim 1 does not involve an inventive step in the light of newly cited document 1 and document 2 cited in the international search report.</p> <p>Document 1 (paragraph [0011]) indicates that "a power generator which generates power with the flow of water is incorporated into a pipe joint", and paragraph</p>			

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

[0002] sets forth a "plumbing component for a kitchen, bathroom, or the like", therefore document 1 may be said to describe a water supply apparatus which provides a power-generating unit partway along a flow path which supplies water to indoor facilities.

In addition, the water supply apparatus set forth in document 1 (fig. 1 to 5) has a "rotating shaft (52)" which extends in a direction perpendicular to the direction of flow, a "hydraulic turbine (32)" mounted on the "rotating shaft (52)", a cylindrical portion with an arcuate cross section along the "hydraulic turbine (32)", and at the end of this cylindrical portion there is a "hydraulic turbine case (40)" having a "bearing (54)" which supports the base end of the "rotating shaft (52)", a "magnet (34)" which is linked to the "hydraulic turbine (32)" and rotates, and a "coil (36)" which is positioned opposite the "magnet (34)", and it is obvious that the "hydraulic turbine case (40)" is mounted by being inserted from the opening of the "pipe joint (11)".

The "hydraulic turbine (32)" set forth in document 1 does not have gaps through which water can pass to the inside of the blades, but a so-called cross-flow hydraulic turbine having gaps through which water can pass to the inside of the blades is common knowledge in the technical field of hydraulic turbines, therefore it would be easy for a person skilled in the art to employ a cross-flow hydraulic turbine as the hydraulic turbine set forth in document 1.

The invention set forth in claim 2 is not disclosed in the newly cited documents or any of the documents cited in the international search report, and is

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
-----------	---

therefore novel and involves an inventive step. In particular, none of the documents suggests or indicates that the tip portion of a holder is engaged in the inner surface opposite the opening of the device main body in order to support the holder.

The invention set forth in claim 3 does not involve an inventive step in the light of newly cited document 1 and document 2 cited in the international search report.

The "coil (36)" set forth in document 1 is divided in a watertight manner from the flow passage by a "water-stopping plate (44)".

The invention set forth in claims 4 and 5 does not involve an inventive step in the light of newly cited document 1 and documents 2 to 4 cited in the international search report.

As set forth in document 3 (fig. 7) and document 4 (fig. 10), the provision of a seal comprising a screw-shaped groove to the rotating shaft of a hydraulic turbine is a widely known technical feature, therefore it would be easy for a person skilled in the art to add a seal comprising a screw-shaped groove to the rotating portion of the hydraulic turbine set forth in document 1.

In particular, document 4 (paragraph [0044]) sets forth a "screw groove (34)", and it is a matter of course that the screw groove has a sharp-pointed shape.

The invention set forth in claim 6 does not involve an inventive step in the light of newly cited document 1 and documents 2 to 4 cited in the international search report.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004479

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
-----------	---

In the light of document 1 (fig. 1 and 2), it is obvious that the rotating shaft of the power-generating unit set forth in document 1 is positioned above the center line of the flow passage.

The invention set forth in claim 7 does not involve an inventive step in the light of newly cited document 1 and documents 2 to 6 cited in the international search report.

As set forth in documents 5 and 6, it is a widely known technical feature to make the gap between the outer peripheral edge of the hydraulic turbine of a power-generating unit and the inner wall of the flow passage asymmetrical with respect to the shaft center of a rotating shaft, therefore it would be easy for a person skilled in the art to make the gap between the outer peripheral edge of the hydraulic turbine of a power-generating unit and the inner wall of the flow passage of the power-generating unit set forth in document 1 asymmetrical with respect to the shaft center of a rotating shaft.

The invention set forth in claims 9 and 10 does not involve an inventive step in the light of newly cited document 1 and documents 2 to 7 cited in the international search report.

As indicated by the "ring-shaped wall portion (2)" and "ejecting holes (22)" set forth in document 7, it is a widely known technical feature to provide guiding members to guide water on the upstream side and downstream side of an impeller.